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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/734,278	12/15/2003	Nobukazu Nagae	15020-000003/US	1774

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EXAMINER

SHERMAN, STEPHEN G

ART UNIT	PAPER NUMBER
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2629

DATE MAILED: 10/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/734,278

Applicant(s)

NAGAE, NOBUKAZU

Examiner

Stephen G. Sherman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-8 and 14-15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hanson et al. (US 6,710,754).

Regarding claim 1, Hanson et al. disclose an image display system comprising:
at least one display panel (Figure 1 and column 2, line 67 to column 3, line 15.);
a memory circuit to store image information, associated with positions within a space in which the at least one display panel is provided, at least temporarily (Figure 2 and column 3, line 58 to column 4, line 7 explain that the processing unit 410 contains a memory 440. Column 2, lines 58-64 explain that the processing unit 410 drives the display 110, meaning that the processing device 410 would need to store the image that is to be displayed on the display 110 at least temporarily before it is displayed.); and

a position sensing subsystem for detecting the position of the at least one display panel within the space (Figure 2 and column 3, lines 16-24 explain that the location sensor 135 provides a location signal to allow for the position of the device 120 to be detected.),

wherein the at least one display panel presents at least a portion of the image information thereon according to its position that has been detected by the position sensing subsystem in the space (Column 3, lines 24-47 explain that a portion of the image in which the device 120 is located over is displayed on the device 120 to compliment the display 110.).

Regarding claim 2, Hanson et al. disclose the image display system of claim 1, wherein the position sensing subsystem includes a detecting subsystem for detecting the configuration of the at least one display panel within the space (Column 3, lines 16-24 explain that the relative location and orientation of device 120 are sensed within the space of display 110.), and wherein the at least one display panel presents at least a portion of the image information thereon according to its position and configuration that have been detected by the position sensing subsystem (Column 3, lines 24-47 explain that a portion of the image is presented based on the location.).

Regarding claim 3, Hanson et al. disclose the image display system of claim 1, further comprising a display data generator for recognizing an image memory area and resolution of the at least one display panel and supplying at least a portion of the image

information to the at least one display panel according to the image memory area and resolution recognized (Column 3, lines 15-47 explain tat the display 110 has a large image on it with a first resolution and that the smaller display's location is sensed and a portion of the larger image is then displayed on the display size of the small display, meaning that the smaller resolution is detected for the size of the larger area and then that size image is displayed on the screen.).

Regarding claim 4, Hanson et al. disclose the image display system of claim 3, wherein the display data generator selects at least the portion of the image information according to the image memory area and resolution recognized, and compresses or expands the selected portion of the image information if necessary (Column 3, lines 46-57 explain that after the image is displayed on the display panel 130, then the image may be zoomed in or zoomed out, i.e. compressed or expanded, if the user selects to do so.).

Regarding claim 5, Hanson et al. disclose the image display system of claim 1, wherein the at least one display panel presents the portion of the image information in actual dimensions (Column 3, lines 24-47 explain that the image is shown in its actual dimensions.).

Regarding claim 6, Hanson et al. disclose the image display system of claim 1, wherein the position sensing subsystem detects the position and/or configuration of the

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at least one display panel within the space at regular time intervals, and the at least one display panel refreshes the information on its display screen at the regular time intervals (Column 3, lines 15-47 explain that as the display 130 is moved the position is sensed, such that the information can be provided, therefore the position would need to be sensed at regular time intervals to detect the location.).

Regarding claim 7, Hanson et al. disclose the image display system of claim 1, wherein the position sensing subsystem includes:

at least one oscillator, which forms an integral part of the at least one display panel (Column 3, lines 15-24 explain that the location sensor 135 sends a signal to the processing unit 410 and column 3, lines 40-47 explain that communication can take place through a wireless radio frequency link, meaning that the location sensor is an oscillator.); and

a position sensing detector, which is provided within the space where the display panel is arranged and which detects at least the position of the display panel within the space in response to a signal that has been transmitted from the at least one oscillator (Column 3, lines 15-24 explain that the processing unit 410 detects the location signal from the location sensor.).

Regarding claim 8, Hanson et al. disclose the image display system of claim 7, wherein the at least one display panel includes a main display panel (Figure 1, device 120) and a sub-display panel (Figure 1, display 110), the at least one oscillator

forming an integral part of the main display panel (As explained in the rejection of claim 7, the oscillator, i.e. location sensor 135 is a part of device 120.), and

wherein the display system further includes a relative position sensing subsystem for detecting the relative positions and relative configurations of the main and sub-display panels (Column 3, lines 15-24 explain that the position sensing subsystem senses the relative location of the main display panel with respect to the sub display panels.), and

wherein the position and configuration of the sub-display panel within the space are detected based on the relative positions of the main and sub-display panels (Column 2, lines 43-65 and column 3, lines 15-24 explain that the configuration of the main panel with respect to the sub panels is detected within the space.).

Regarding claim 14, Hanson et al. disclose the image display system of claim 1, wherein the portion of the image information, which is associated with the position within the space, is information that would be unavailable to users without this image display system (Column 5, lines 19-30 explain that device 120 can provide information that is hidden on display 110.).

Regarding claim 15, Hanson et al. disclose the image display system of claim 1, wherein the image information is associated with absolute positions within the space (Since the device 120 moves about the display 110, then the display shown on device 120, which is a portion of the image shown on display 110 based on the device 120's

location on the display, is based on an absolute position with respect to the display 110.).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 10-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson et al. (US 6,710,754).

Regarding claim 10, Hanson et al. disclose the image display system of claim 8.

Although Hanson et al. fail to explicitly teach wherein the relative position sensing subsystem detects the relative positions and the relative configurations by using an

electromagnetic wave, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

Regarding claim 11, Hanson et al. disclose the image display system of claim 10.

Although Hanson et al. fail to explicitly teach wherein the electromagnetic wave is an infrared ray, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

Regarding claim 12, Hanson et al. disclose the image display system of claim 8.

Although Hanson et al. fail to explicitly teach wherein the relative position sensing subsystem detects the relative positions and the relative configurations by using a magnetic field, it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to do so in order to allow for the position information to be communicated between the device without interference.

6. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson et al. (US 6,710,754) in view of Kulas (US 2003/0151562).

Regarding claim 9, Hanson et al. disclose the image display system of claim 8, wherein multiple display panels, including the at least one display panel, are provided (Figure 1).

Hanson et al. fail to teach wherein the at least one oscillator is attachable to, and removable from, any of the multiple display panels, and wherein the display panel with the at least one oscillator attached thereto functions as the main display panel.

Kulas discloses wherein the at least one oscillator is attachable to, and removable from, any of the multiple display panels, and wherein the display panel with the at least one oscillator attached thereto functions as the main display panel (Paragraph [0024] explains that there are multiple panels 104, 106 and 108 where 104 is the main screen. Paragraph [0032] then explains that the sensors are placed by a user on the display panels, meaning that the sensors are removable and attachable, and the main panel would have sensors attached to it.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the multiple display method taught by Kulas with the image display system taught by Hanson et al. in order to provide a larger field of view in which the displays of the panels are automatically updated to allow for easily changing the setup.

Regarding claim 13, Hanson et al. disclose the image display system of claim 1.

Hanson et al. fail to teach wherein multiple display panels, including the at least one display panel, are provided, and wherein each of the multiple display panels

includes the memory circuit, and extracts an associated portion of the image information according to its position that has been detected within the space by the position sensing subsystem and presents the extracted portion thereon.

Kulas discloses wherein multiple display panels are provided (Figure 2C shows that there are multiple panels 212, 214 and 216.), and wherein each of the multiple display panels includes the memory circuit, and extracts an associated portion of the image information according to its position that has been detected within the space by the position sensing subsystem and presents the extracted portion thereon (Paragraph [0041] explains that each screen receives a portion of an image from a computer 200, which acts as the memory circuit since it stores the image information.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the multiple display method taught by Kulas with the image display system taught by Hanson et al. in order to provide a larger field of view in which the displays of the panels are automatically updated to allow for easily changing the setup.

7. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hanson et al. (US 6,710,754) in view of Kamakura et al. (US 6,172,657).

Regarding claim 16, Hanson et al. disclose the image display system of claim 15.

Hanson et al. fail to teach wherein the image information includes pictures of piping and/or wiring provided near the space.

Kamakura et al. disclose of image information including pictures of piping and/or wiring near a space (Figure 10 and column 11, line 43 to column 12, line 11.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the idea of being able to detect and see piping underneath a surface such as the ground as taught by Kamakura et al. with the image display system taught by Hanson et al. in order to allow for efficient and accurate measurement and detection of piping located underground that would normally be unseen without the display device.

Regarding claim 17, Hanson et al. disclose the image display system of claim 15.

Hanson et al. fail to teach wherein the image information includes information representing an intensity distribution of an electromagnetic wave in the space.

Kamakura et al. disclose of image information including information representing an intensity distribution of an electromagnetic wave in the space (Column 11, lines 43-54 explain that ultrasonic waves are used for the detection and column 12, lines 3-11 explain that various sensors are available for detection of objects not visible by a viewer, therefore making it obvious to use electromagnetic waves instead of ultrasonic waves since electromagnetic waves are less likely to have interference and provide for more real time processing and performance.).

Therefore it would have been obvious to “one of ordinary skill” in the art at the time the invention was made to use the idea of being able to detect and see piping underneath a surface such as the ground as taught by Kamakura et al. with the image display system taught by Hanson et al. in order to allow for efficient and accurate measurement and detection of piping located underground that would normally be unseen without the display device.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fraser et al. (US 2003/0098832) disclose of a display system with a first and second display device in which the second is smaller than the first and provides a sub content of the larger display based on its location on the larger display.

Feinstein (US 2002/0190947) discloses a system and method for view navigation and magnification of the display of hand-held devices in response to the orientation changes along only two axes of rotation as measured by sensors inside the devices.

Morita (JP 2001-071966 A) discloses of a PDA which can be attached/detached from a motorcycle and which senses location/position information using GPS navigation in order to provide directions to the driver.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen G. Sherman whose telephone number is (571) 272-2941. The examiner can normally be reached on M-F, 8:00 a.m. - 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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23 October 2006

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SUPERVISORY PATENT EXAMINER
Amr A. Awad